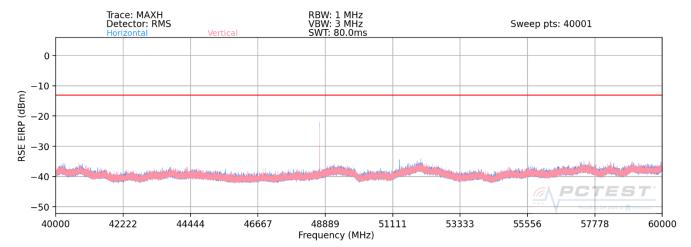


### 40GHz - 60GHz



Plot 7-93. Ant 1-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
48700.71	Low	50	2Tx	QPSK	Н	34	273	-23.59	-13.00	-10.59
51334.00	Mid	50	2Tx	QPSK	Н	35	273	-22.91	-13.00	-9.91
54985.97	High	50	2Tx	QPSK	Н	_	_	-44.71	-13.00	-31.71

Table 7-50. Ant 1 - 2Tx - Spurious Emissions Table (40GHz - 60GHz)

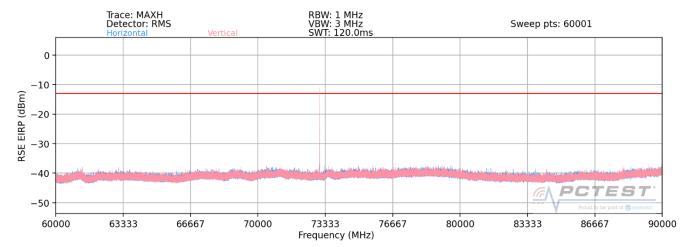
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 84 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 64 01 196



### 60GHz - 90GHz



Plot 7-94. Ant 1-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

	Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
	71105.90	Low	50	2Tx	QPSK	Н	145	286	-17.85	-13.00	-4.85
ĺ	73051.31	Mid	50	2Tx	QPSK	Н	148	286	-22.53	-13.00	-9.53
ĺ	73202.60	High	50	2Tx	QPSK	Н	144	286	-16.34	-13.00	-3.34

Table 7-51. Ant 1 - 2Tx - Spurious Emissions Table (60GHz - 90GHz)

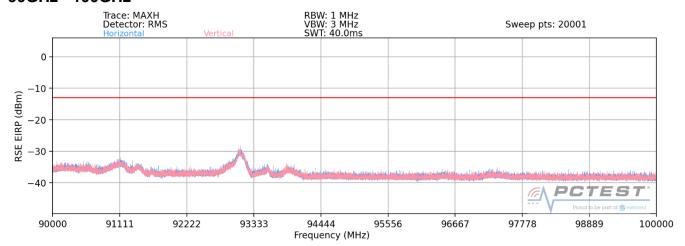
## **Notes**

- The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.
- 2) The Pre-scan was performed with Detector set to "RMS" and the Trace set to "Max Hold" and the above RSE measurements are taken with TRP.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 85 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 65 01 196



### 90GHz - 100GHz



Plot 7-95. Ant 1-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

## **Spurious Emissions EIRP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
93024.92	Low	50	2Tx	QPSK	V	-	-	-42.02	-13.00	-29.02
97387.49	Mid	50	2Tx	QPSK	V	-	-	-46.43	-13.00	-33.43
98009.19	High	50	2Tx	QPSK	V	-	-	-46.83	-13.00	-33.83

Table 7-52. Ant 1 - 2Tx - Spurious Emissions Table (90GHz - 100GHz)

### **Notes**

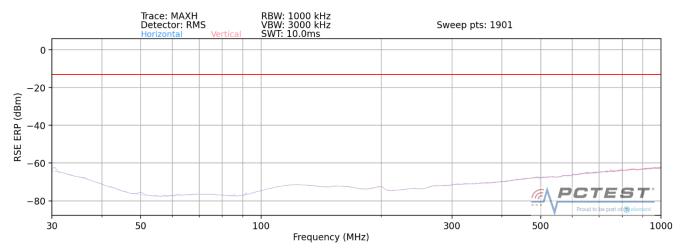
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 86 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 66 01 196



## Band n258-R1 (N Patch)

### 30MHz - 1GHz



Plot 7-96. Ant 2- n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

## **Spurious Emissions ERP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
570.56	Low	50	2Tx	QPSK	Н	-	-	-65.74	-13.00	-52.74
748.31	Mid	50	2Tx	QPSK	Н	-	-	-62.87	-13.00	-49.87
976.07	High	50	2Tx	QPSK	Η	-		-67.90	-13.00	-54.90

Table 7-53. Ant 2 - 2Tx - Spurious Emissions Table (30MHz - 1GHz)

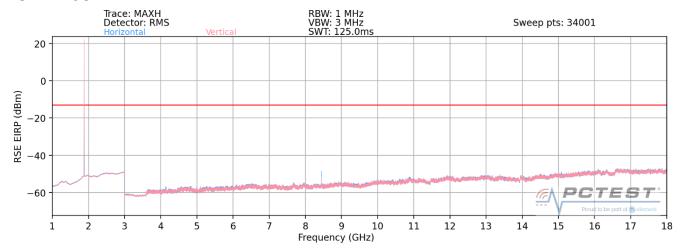
### **Notes**

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 87 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 67 01 196



### 1GHz - 18GHz



Plot 7-97. Ant 2-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions EIRP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
4332.50	Low	50	2Tx	QPSK	Н	-	-	-61.57	-13.00	-48.57
8442.00	Mid	50	2Tx	QPSK	Н	334	242	-55.36	-13.00	-42.36
16211.92	High	50	2Tx	QPSK	Н	-	-	-55.29	-13.00	-42.29

Table 7-54. Ant 2 - 2Tx - Spurious Emissions Table (1GHz - 18GHz)

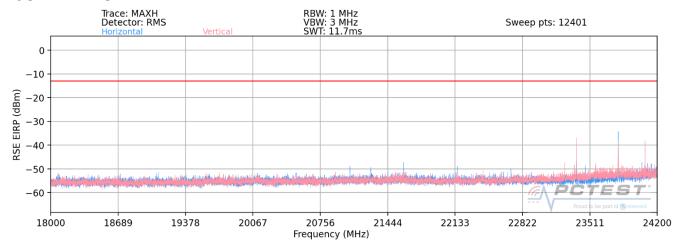
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 88 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 66 01 196

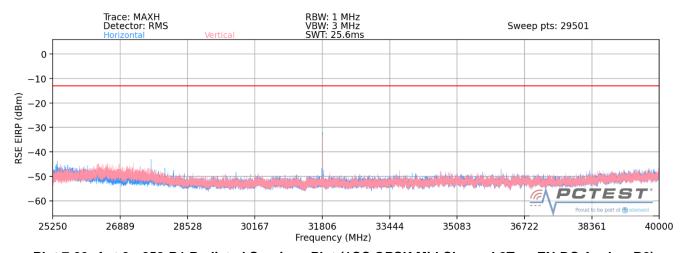


## 18GHz - 24.2GHz



Plot 7-98. Ant 2-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

## 25.25GHz - 40GHz



Plot 7-99. Ant 2-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 89 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 03 01 130



# **Spurious Emissions EIRP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
23374.00	Low	50	2Tx	QPSK	V	31	150	-43.02	-13.00	-30.02
23348.58	Low	50	2Tx	QPSK	Н	230	150	-47.08	-13.00	-34.08
23350.00	Low	50	2Tx	QPSK	Н	282	150	-52.57	-13.00	-39.57
23801.36	Low	50	2Tx	QPSK	V	295	150	-43.15	-13.00	-30.15
23802.70	Low	50	2Tx	QPSK	V	315	150	-44.11	-13.00	-31.11
23802.10	Low	50	2Tx	QPSK	Н	222	150	-42.38	-13.00	-29.38
23800.00	Low	50	2Tx	QPSK	Н	256	150	-47.89	-13.00	-34.89
24624.54	Mid	50	2Tx	QPSK	Н	189	150	-37.43	-13.00	-24.43
27427.99	High	50	2Tx	QPSK	Н	246	150	-46.15	-13.00	-33.15
31816.50	High	50	2Tx	QPSK	Н	21	150	-38.84	-13.00	-25.84

Table 7-55. Ant 2 - 2Tx - Spurious Emissions Table (18GHz - 40GHz)

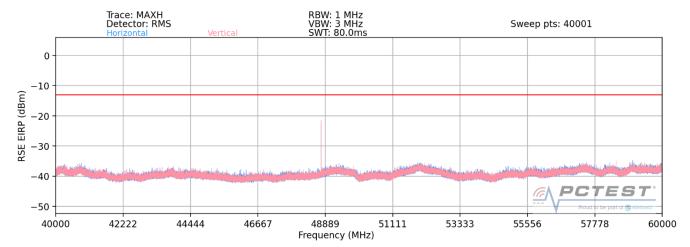
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 90 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 30 01 190



### 40GHz - 60GHz



Plot 7-100. Ant 2-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
48700.55	Low	50	2Tx	QPSK	V	268	366	-22.93	-13.00	-9.93
48851.03	Low	50	2Tx	QPSK	V	271	3	-22.65	-13.00	-9.65
51334.74	Mid	50	2Tx	QPSK	V	269	6	-23.64	-13.00	-10.64
51484.92	High	50	2Tx	QPSK	V	8	271	-22.31	-13.00	-9.31

Table 7-56. Ant 2 - 2Tx - Spurious Emissions Table (40GHz - 60GHz)

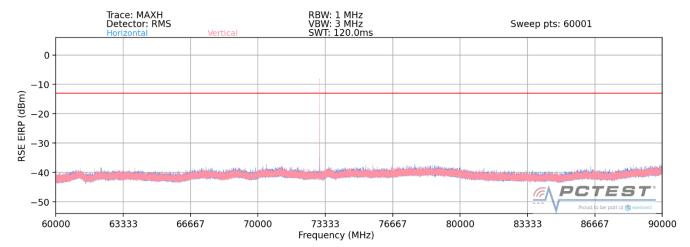
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 91 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 91 01 196



### 60GHz - 90GHz



Plot 7-101. Ant 2-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
72826.32	Low	50	2Tx	QPSK	V	84	82	-27.82	-13.00	-14.82
73051.15	Mid	50	2Tx	QPSK	V	86	82	-29.27	-13.00	-16.27
73275.87	High	50	2Tx	QPSK	V	85	82	-23.23	-13.00	-10.23

Table 7-57. Ant 2 - 2Tx - Spurious Emissions Table (60GHz - 90GHz)

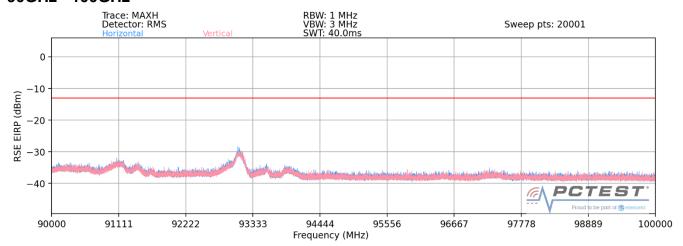
## **Notes**

- The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.
- 2) The Pre-scan was performed with Detector set to "RMS" and the Trace set to "Max Hold" and the above RSE measurements are taken with TRP.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 92 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 92 01 196



### 90GHz - 100GHz



Plot 7-102. Ant 2-n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

## **Spurious Emissions EIRP Sample Calculation (n258-R1)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

	Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
	95994.88	Low	50	2Tx	QPSK	V	-	-	-46.82	-13.00	-33.82
	97382.46	Mid	50	2Tx	QPSK	V	-	-	-46.17	-13.00	-33.17
ĺ	98016.48	High	50	2Tx	QPSK	V	-	-	-46.85	-13.00	-33.85

Table 7-58. Ant 2 - 2Tx - Spurious Emissions Table (90GHz - 100GHz)

### **Notes**

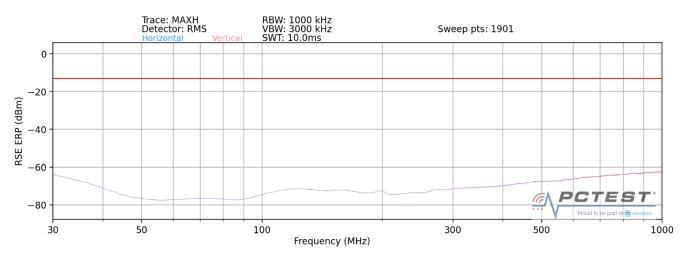
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 93 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 93 01 196



## Band n258-R2 (M Patch)

### 30MHz - 1GHz



Plot 7-103. Ant 1- n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions ERP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
513.00	Low	50	2Tx	QPSK	Н	150	307	-63.87	-13.00	-52.71
732.99	Mid	50	2Tx	QPSK	Н	135	351	-62.19	-13.00	-53.65
994.00	High	50	2Tx	QPSK	H	199	275	-60.51	-13.00	-54.14

Table 7-59. Ant 1 - 2Tx - Spurious Emissions Table (30MHz - 1GHz)

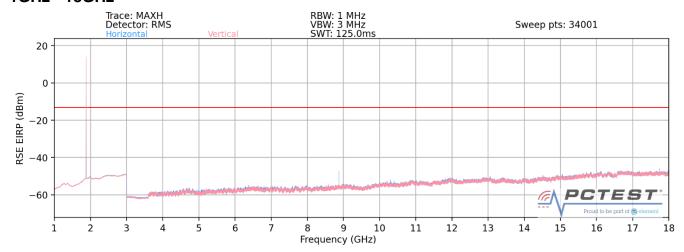
### **Notes**

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 94 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 94 01 196



### 1GHz - 18GHz



Plot 7-104. Ant 1-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
2491.50	Low	50	2Tx	QPSK	Н	-	-	-74.56	-13.00	-61.56
8872.30	Mid	50	2Tx	QPSK	Н	341	201	-54.89	-13.00	-41.89
10200.00	High	50	2Tx	QPSK	Н	•	-	-64.28	-13.00	-51.28
17800.00	High	50	2Tx	QPSK	Н	-	-	-59.53	-13.00	-46.53

Table 7-60. Ant 1 - 2Tx - Spurious Emissions Table (1GHz - 18GHz)

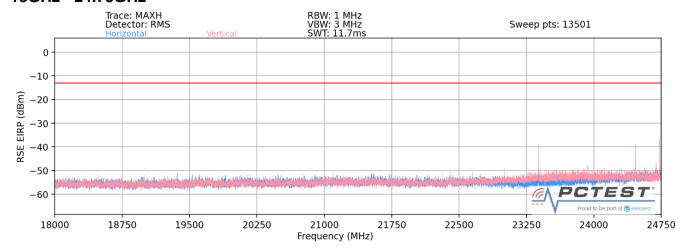
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 95 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 95 01 196

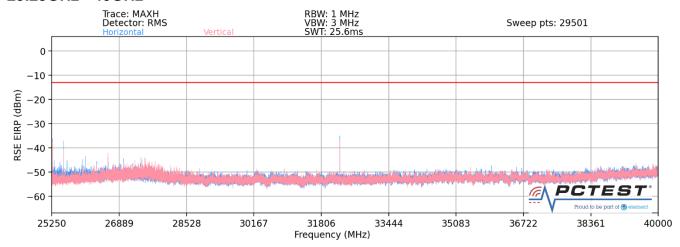


## 18GHz - 24.75GHz



Plot 7-105. Ant 1-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

## 25.25GHz - 40GHz



Plot 7-106. Ant 1-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 96 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 90 01 190



# **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Δzimi ith	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
23383.00	Low	50	2Tx	QPSK	V	24	150	-46.64	-13.00	-33.64
24463.00	Mid	50	2Tx	QPSK	Н	22	150	-48.70	-13.00	-35.70
24731.67	High	50	2Tx	QPSK	Н	272	150	-36.84	-13.00	-23.84
32255.50	High	50	2Tx	QPSK	Н	42	150	-44.66	-13.00	-31.66
25537.00	High	50	2Tx	QPSK	Н	48	150	-44.71	-13.00	-31.71
25269.67	High	50	2Tx	QPSK	Н	350	150	-43.03	-13.00	-30.03

Table 7-61. Ant 1 - 2Tx - Spurious Emissions Table (18GHz- 40GHz)

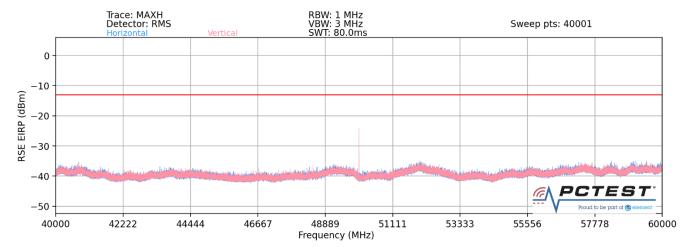
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 07 of 109
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset	Page 97 of 198



### 40GHz - 60GHz



Plot 7-107. Ant 1-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

## **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
45000.00	Low	50	2Tx	QPSK	V	-	-	-47.22	-13.00	-34.22
50000.00	Mid	50	2Tx	QPSK	V	249	263	-24.28	-13.00	-11.28
52634.00	High	50	2Tx	QPSK	V	338	232	-40.49	-13.00	-27.49
58000.00	High	50	2Tx	QPSK	V	-	-	-47.17	-13.00	-34.17
42000.00	Low	50	2Tx	QPSK	V	-	-	-48.34	-13.00	-35.34

Table 7-62. Ant 1 - 2Tx - Spurious Emissions Table (40GHz - 60GHz)

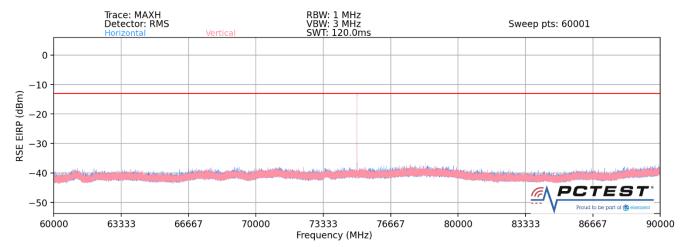
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 98 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 96 01 196



### 60GHz - 90GHz



Plot 7-108. Ant 1-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarizatio n [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74320.00	Low	50	2Tx	QPSK	Н	197	73	-16.58	-13.00	-3.58
75001.18	Mid	50	2Tx	QPSK	Н	206	71	-21.55	-13.00	-8.55
75676.00	High	50	2Tx	QPSK	Н	320	122	-16.54	-13.00	-3.54

Table 7-63. Ant 1 - 2Tx - Spurious Emissions Table (60GHz - 90GHz)

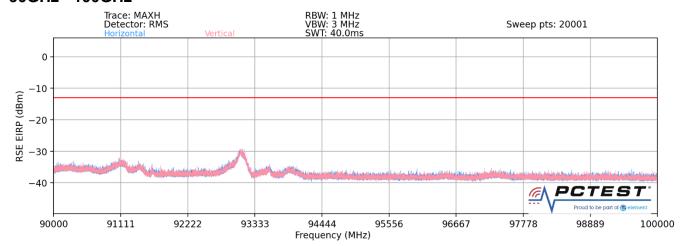
### **Notes**

- The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.
- 2) The Pre-scan was performed with Detector set to "RMS" and the Trace set to "Max Hold" and the above RSE measurements for Mid Channel are taken with TRP.

FCC ID: A3LSMS901U	Product to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 99 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 99 01 196



### 90GHz - 100GHz



Plot 7-109. Ant 1-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

## **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
96000.75	Low	50	2Tx	QPSK	Н	-	-	-46.75	-13.00	-33.75
99008.39	Mid	50	2Tx	QPSK	Н		-	-46.95	-13.00	-33.95
101006.63	High	50	2Tx	QPSK	Н	-	-	-46.56	-13.00	-33.56

Table 7-64. Ant 1 - 2Tx - Spurious Emissions Table (90GHz - 100GHz)

### **Notes**

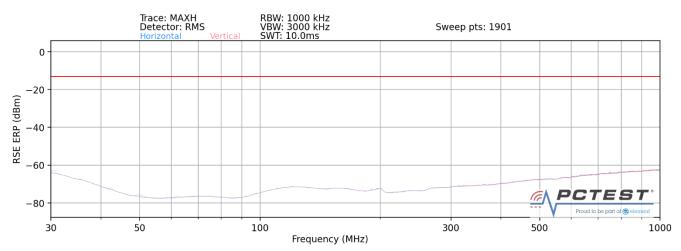
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 100 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 100 01 196



# Band n258-R2 (N Patch)

### 30MHz - 1GHz



Plot 7-110. Ant 2- n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

## **Spurious Emissions ERP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
185.43	Low	50	2Tx	QPSK	V	-	-	-67.43	-13.00	-54.43
747.80	Mid	50	2Tx	QPSK	Н	-	-	-61.78	-13.00	-48.78
920.86	High	50	2Tx	QPSK	Н	-	-	-60.03	-13.00	-47.03

Table 7-65. Ant 2 - 2Tx - Spurious Emissions Table (30MHz - 1GHz)

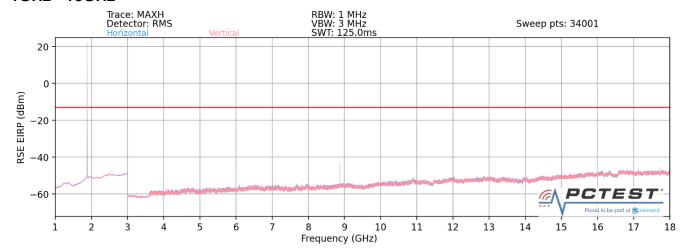
### **Notes**

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 101 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 101 01 196



## 1GHz - 18GHz



Plot 7-111. Ant 2-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
4673.30	Low	50	2Tx	QPSK	Н	-	-	-72.69	-13.00	-59.69
8872.30	Mid	50	2Tx	QPSK	Н	325	215	-44.82	-13.00	-31.82
14620.19	High	50	2Tx	QPSK	Н	-	-	-64.28	-13.00	-51.28
17792.30	High	50	2Tx	QPSK	Н	-	-	-54.01	-13.00	-41.01

Table 7-49. Ant 2 - 2Tx - Spurious Emissions Table (1GHz - 18GHz)

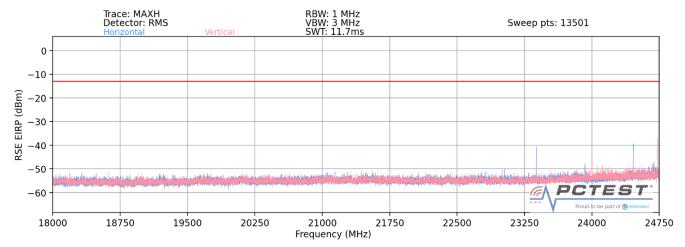
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 102 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 102 01 196



## 18GHz - 24.75GHz



Plot 7-112. Ant 2-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

### 25.25GHz - 40GHz



Plot 7-113. Ant 2-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 102 of 109
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 103 of 198



# **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
23383.10	Mid	50	2Tx	QPSK	Н	285	150	-46.59	-13.00	-33.59
24731.00	Low	50	2Tx	QPSK	V	31	150	-40.08	-13.00	-27.08
24462.50	Mid	50	2Tx	QPSK	Н	319	150	-44.69	-13.00	-31.69
24001.00	Mid	50	2Tx	QPSK	Н	30	150	-51.90	-13.00	-38.90
25269.00	Mid	50	2Tx	QPSK	Н	284	150	-43.88	-13.00	-30.88
25537.00	Mid	50	2Tx	QPSK	Н	287	150	-43.19	-13.00	-30.19
25997.89	Mid	50	2Tx	QPSK	Н	313	150	-51.64	-13.00	-38.64
32255.30	High	50	2Tx	QPSK	Н	293	150	-48.65	-13.00	-35.65

Table 7-67. Ant 2 - 2Tx - Spurious Emissions Table (18GHz - 40GHz)

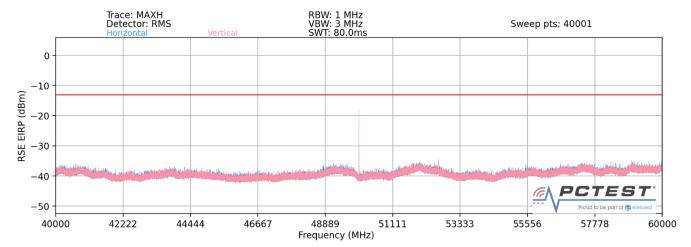
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 104 of 109
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset	Page 104 of 198



### 40GHz - 60GHz



Plot 7-114. Ant 2-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
41985.00	Low	50	2Tx	QPSK	Н	-	-	-48.85	-13.00	-35.85
45009.23	Low	50	2Tx	QPSK	Н	-	-	-48.10	-13.00	-35.10
50001.07	Mid	50	2Tx	QPSK	Н	175	273	-22.40	-13.00	-9.40
52634.00	High	50	2Tx	QPSK	Н	206	188	-40.38	-13.00	-27.38
58007.28	High	50	2Tx	QPSK	Н	-	-	-47.25	-13.00	-34.25

Table 7-68. Ant 2 - 2Tx - Spurious Emissions Table (40GHz - 60GHz)

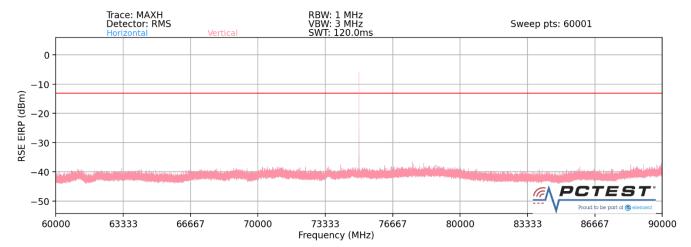
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 105 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 105 01 196



### 60GHz - 90GHz



Plot 7-115. Ant 2-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74326.40	Low	50	2Tx	QPSK	V	354	104	-22.58	-13.00	-9.58
75001.74	Mid	50	2Tx	QPSK	V	354	103	-20.64	-13.00	-7.64
75676.07	High	50	2Tx	QPSK	V	358	102	-22.72	-13.00	-9.72

Table 7-69. Ant 2 - 2Tx - Spurious Emissions Table (60GHz - 90GHz)

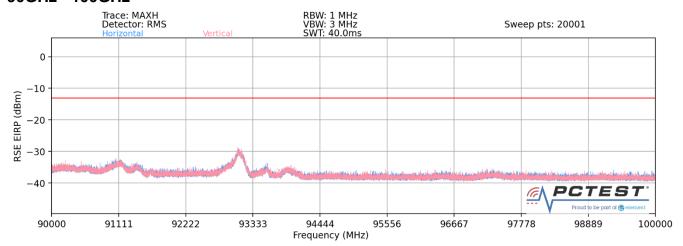
### **Notes**

- The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.
- 2) The Pre-scan was performed with Detector set to "RMS" and the Trace set to "Max Hold" and the above RSE measurements are taken with TRP.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 106 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 100 01 190



### 90GHz - 100GHz



Plot 7-116. Ant 2-n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
97013.50	Low	50	2Tx	QPSK	V	-	-	-46.99	-13.00	-33.99
99980.00	Mid	50	2Tx	QPSK	V	-	-	-46.95	-13.00	-33.95
100006.43	High	50	2Tx	QPSK	V	_	_	-46.90	-13.00	-33.90

Table 7-70. Ant 2 - 2Tx - Spurious Emissions Table (90GHz - 100GHz)

## Notes

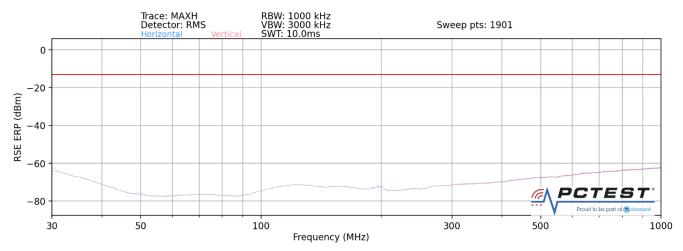
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 107 of 109
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 107 of 198



# Band n261 (M Patch)

### 30MHz - 1GHz



Plot 7-117. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

## **Spurious Emissions ERP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
180.23	Low	50	2Tx	QPSK	Н	-	-	-71.84	-13.00	-58.84
192.57	Mid	50	2Tx	QPSK	Н	-	-	-73.06	-13.00	-60.06
993.87	High	50	2Tx	QPSK	Н	-	-	-60.12	-13.00	-47.12
603.32	Mid	50	2Tx	QPSK	Н	-	-	-63.94	-13.00	-50.94

Table 7-71. Ant 1 - 2Tx - Spurious Emissions Table (30MHz - 1GHz)

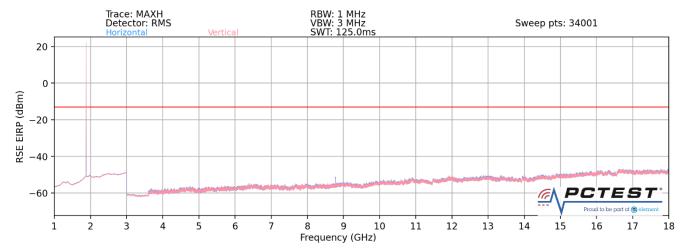
### **Notes**

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 108 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset	rage 100 01 190



### 1GHz - 18GHz



Plot 7-118. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

## **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

	Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
	2513.90	Low	50	2Tx	QPSK	Н	-	-	-76.55	-13.00	-63.55
ĺ	8777.60	Mid	50	2Tx	QPSK	Н	306	279	-56.88	-13.00	-43.88
ĺ	15000.32	High	50	2Tx	QPSK	Н	-	-	-64.04	-13.00	-51.04

Table 7-72. Ant 1 - 2Tx - Spurious Emissions Table (1GHz - 18GHz)

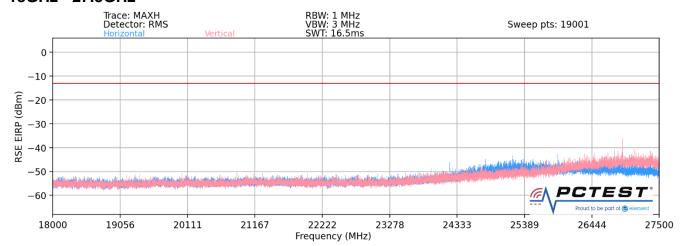
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 109 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 109 01 196



### 18GHz - 27.5GHz



Plot 7-119. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
26926.00	Low	50	2Tx	QPSK	V	36	150	-45.41	-13.00	-32.41
26446.10	Mid	50	2Tx	QPSK	V	347	150	-48.79	-13.00	-35.79
26980.00	High	50	2Tx	QPSK	V	340	150	-48.79	-13.00	-35.79

Table 7-73. Ant 1 - 2Tx - Spurious Emissions Table (18GHz - 27.5GHz)

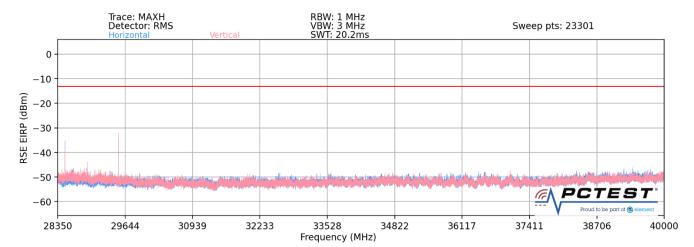
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 110 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 110 01 196



### 28.35GHz - 40GHz



Plot 7-120. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
28488.00	Low	50	2Tx	QPSK	V	361	150	-43.90	-13.00	-30.90
28923.22	Mid	50	2Tx	QPSK	V	318	150	-48.73	-13.00	-35.73
29520.00	High	50	2Tx	QPSK	V	296	150	-39.49	-13.00	-26.49

Table 7-74. Ant 1 - 2Tx - Spurious Emissions Table (28.35GHz - 40GHz)

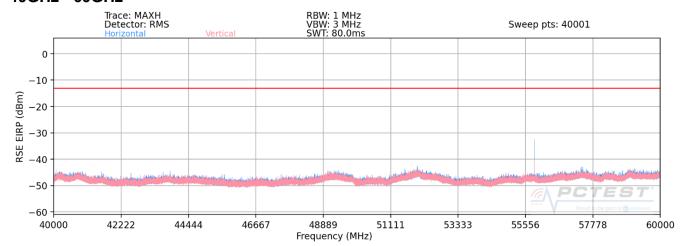
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 111 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 111 01 196



### 40GHz - 60GHz



Plot 7-121. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
55051.35	Low	50	2Tx	QPSK	Н	142	279	-37.34	-13.00	-24.34
55851.08	Mid	50	2Tx	QPSK	Н	142	272	-36.23	-13.00	-23.23
56650.80	High	50	2Tx	QPSK	Н	137	265	-35.69	-13.00	-22.69

Table 7-75. Ant 1 - 2Tx - Spurious Emissions Table (40GHz - 60GHz)

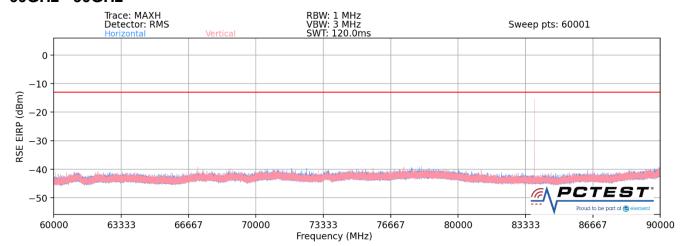
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 112 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 112 01 196



### 60GHz - 90GHz



Plot 7-122. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

	Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
	83561.00	Low	50	2Tx	QPSK	V	52	320	-26.50	-13.00	-13.50
ſ	83776.03	Mid	50	2Tx	QPSK	V	27	210	-25.89	-13.00	-12.89
ſ	83912.78	High	50	2Tx	QPSK	V	50	300	-27.43	-13.00	-14.43

Table 7-76. Ant 1 - 2Tx - Spurious Emissions Table (60GHz - 90GHz)

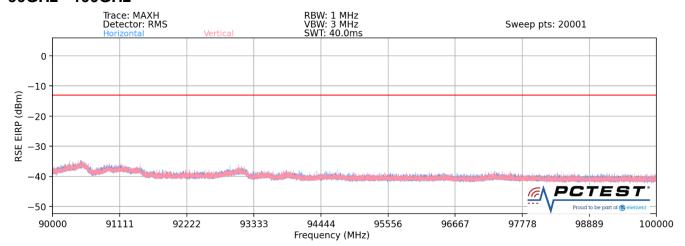
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 113 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 113 01 196



### 90GHz - 100GHz



Plot 7-123. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

## **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
110097.03	Low	50	2Tx	QPSK	V	-	-	-46.16	-13.00	-33.16
11170.30	Mid	50	2Tx	QPSK	V	-	-	-45.69	-13.00	-32.69
113318.80	High	50	2Tx	QPSK	V	-	-	-45.45	-13.00	-32.45

Table 7-77. Ant 1- 2Tx - Spurious Emissions Table (90GHz - 100GHz)

### **Notes**

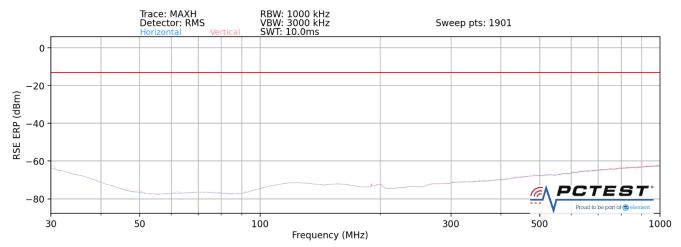
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 114 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 114 01 196



# Band n261 (N Patch)

### 30MHz - 1GHz



Plot 7-124. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions ERP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
189.79	Low	50	2Tx	QPSK	V	-		-79.44	-13.00	-66.44
768.22	Mid	50	2Tx	QPSK	V	-		-62.35	-13.00	-49.35
922.91	High	50	2Tx	QPSK	V	-	-	-60.49	-13.00	-47.49

Table 7-78. Ant 2- 2Tx - Spurious Emissions Table (30MHz - 1GHz)

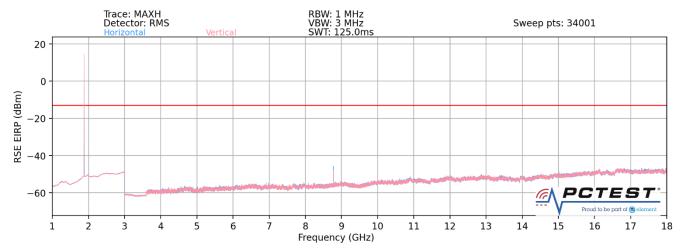
### **Notes**

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 115 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 115 01 196



### 1GHz - 18GHz



Plot 7-125. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

## **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

	Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
	4986.50	Low	50	2Tx	QPSK	Н	-	-	-77.03	-13.00	-64.03
ĺ	8777.69	Mid	50	2Tx	QPSK	Н	301	240	-50.32	-13.00	-37.32
ĺ	16016.48	High	50	2Tx	QPSK	Н	-	-	-65.65	-13.00	-52.65

Table 7-79. Ant 2 - 2Tx - Spurious Emissions Table (1GHz - 18GHz)

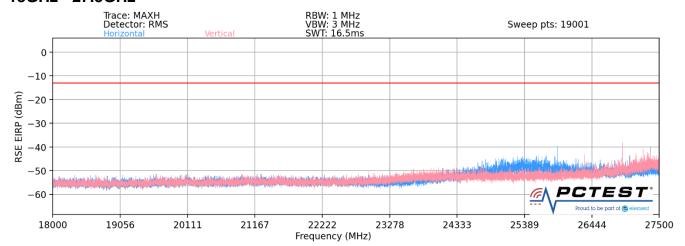
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 116 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 116 01 196



### 18GHz - 27.5GHz



Plot 7-126. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
26926.50	Low	50	2Tx	QPSK	V	224	150	-48.18	-13.00	-35.18
26330.00	Mid	50	2Tx	QPSK	V	240	150	-50.55	-13.00	-37.55
25906.70	High	50	2Tx	QPSK	Н	219	150	-46.33	-13.00	-33.33
26926.56	High	50	2Tx	QPSK	Н	239	150	-45.62	-13.00	-32.62

Table 7-80. Ant 2 - 2Tx - Spurious Emissions Table (18GHz - 27.5GHz)

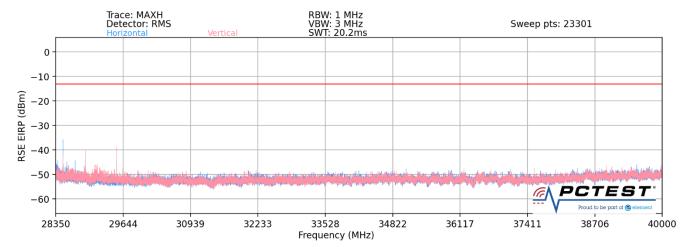
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 117 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 117 01 196



### 28.35GHz - 40GHz



Plot 7-127. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
28488.50	Low	50	2Tx	QPSK	Н	310	150	-44.86	-13.00	-31.86
28722.20	Mid	50	2Tx	QPSK	Н	275	150	-50.78	-13.00	-37.78
28207.00	High	50	2Tx	QPSK	V	205	150	-41.26	-13.00	-28.26
29519.00	High	50	2Tx	QPSK	V	243	150	-46.86	-13.00	-33.86

Table 7-81. Ant 2 - 2Tx - Spurious Emissions Table (28.35GHz - 40GHz)

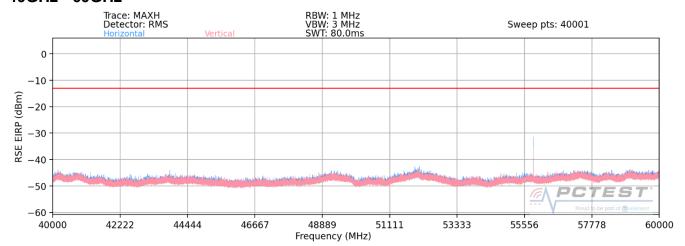
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 118 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 116 01 196



### 40GHz - 60GHz



Plot 7-128. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
55050.99	Low	50	2Tx	QPSK	Н	3279	91	-30.96	-13.00	-17.96
55850.46	Mid	50	2Tx	QPSK	Н	338	93	-36.00	-13.00	-23.00
56651.22	High	50	2Tx	QPSK	Н	327	292	-41.42	-13.00	-28.42

Table 7-82. Ant 2 - 2Tx - Spurious Emissions Table (40GHz - 60GHz)

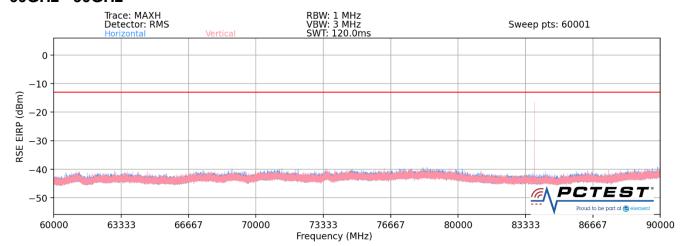
### **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 119 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 119 01 190



## 60GHz - 90GHz



Plot 7-129. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor B2)

# **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
83661.18	Low	50	2Tx	QPSK	Н	295	260	-18.56	-13.00	-5.56
83776.00	Mid	50	2Tx	QPSK	Н	294	260	-16.64	-13.00	-3.64
83936.75	High	50	2Tx	QPSK	Н	226	255	-17.79	-13.00	-4.79

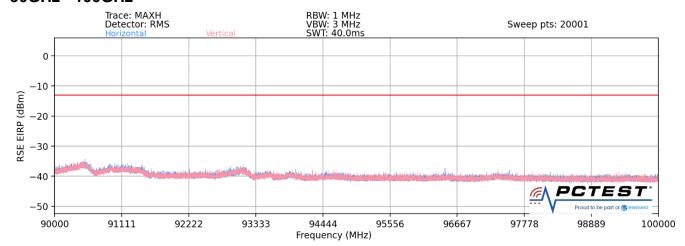
Table 7-83. Ant 2 - 2Tx - Spurious Emissions Table (60GHz - 90GHz)

## **Notes**

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 120 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 120 01 196



#### 90GHz - 100GHz



Plot 7-130. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor B2)

## **Spurious Emissions EIRP Sample Calculation (n261)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
110109.53	Low	50	2Tx	QPSK	Н	-	-	-45.55	-13.00	-32.55
111690.97	Mid	50	2Tx	QPSK	Н	-	-	-45.61	-13.00	-32.61
113289.85	High	50	2Tx	QPSK	Н	-	-	-45.46	-13.00	-32.46

Table 7-84. Ant 2 - 2Tx - Spurious Emissions Table (90GHz - 100GHz)

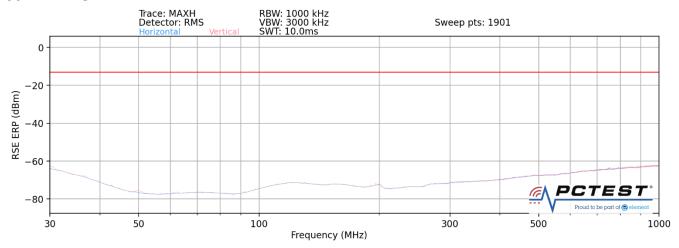
## **Notes**

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 121 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 121 01 196



# Band n260 (M Patch)

## 30MHz - 1GHz



Plot 7-131. Ant 1-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor Band 2)

## **Spurious Emissions ERP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
191.56	Low	50	2Tx	QPSK	Н	-	-	-74.20	-13.00	-43.31
748.77	Mid	50	2Tx	QPSK	Н	-	-	-61.84	-13.00	-48.84
998.46	High	50	2Tx	QPSK	Η	-	-	-60.62	-13.00	-47.62
710.53	Mid	50	2Tx	QPSK	Н	302	250	-56.31	-13.00	-43.31

Table 7-85. Ant 1 - 2Tx - Spurious Emissions Table (30MHz - 1GHz)

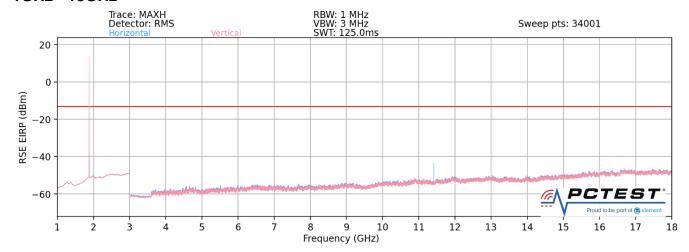
#### **Notes**

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 122 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 122 01 196



## 1GHz - 18GHz



Plot 7-132. Ant 1-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

## **Spurious Emissions EIRP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

	Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
	9510.20	Low	50	2Tx	QPSK	Н	-	-	-68.60	-13.00	-55.60
ĺ	11416.00	Mid	50	2Tx	QPSK	Н	21	334	-51.69	-13.00	-38.69
ĺ	17988.60	High	50	2Tx	QPSK	Н	-	-	-61.51	-13.00	-48.51

Table 7-86. Ant 1 - 2Tx - Spurious Emissions Table (1GHz - 18GHz)

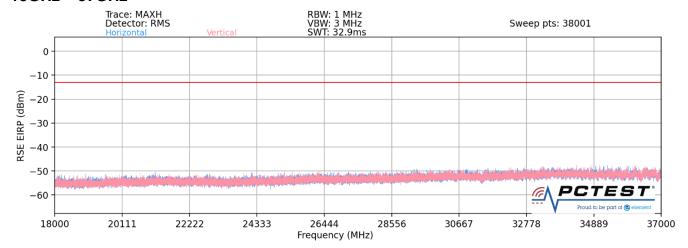
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 123 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 123 01 196



## 18GHz - 37GHz



Plot 7-133. Ant 1-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions EIRP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
18925.00	Low	50	2Tx	QPSK	Н	-	-	-56.76	-13.00	-43.76
21919.20	Mid	50	2Tx	QPSK	Н	-	-	-57.55	-13.00	-44.55
27421.20	High	50	2Tx	QPSK	Н	-	-	-56.88	-13.00	-43.88

Table 7-87. Ant 1 - 2Tx - Spurious Emissions Table (18GHz - 37GHz)

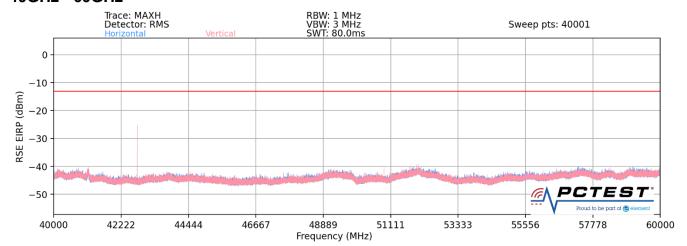
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 124 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 124 01 190



## 40GHz - 60GHz



Plot 7-134. Ant 1-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions EIRP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
41723.30	Low	50	2Tx	QPSK	V	93	306	-44.70	-13.00	-31.70
45387.59	Mid	50	2Tx	QPSK	V	89	269	-34.75	-13.00	-21.75
46154.89	High	50	2Tx	QPSK	V	240	294	-59.76	-13.00	-46.76
42753.00	High	50	2Tx	QPSK	V	89	281	-31.10	-13.00	-18.10
51072.00	High	50	2Tx	QPSK	V	87	286	-42.25	-13.00	-29.25
51772.76	High	50	2Tx	QPSK	V	89	285	-40.23	-13.00	-27.23
53529.21	High	50	2Tx	QPSK	V	89	287	-48.81	-13.00	-35.81
56364.77	High	50	2Tx	QPSK	V	89	285	-58.29	-13.00	-45.29

Table 7-88. Ant 1 - 2Tx - Spurious Emissions Table (40GHz - 60GHz)

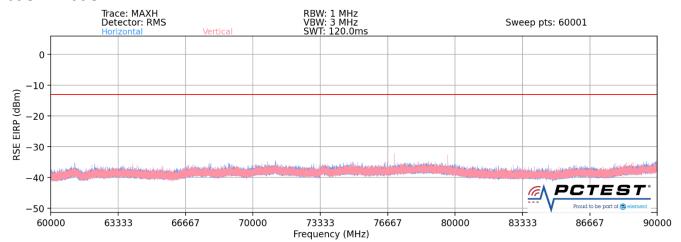
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1.5 meter.

FCC ID: A3LSMS901U	PCTEST* Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 125 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset	Page 125 01 196



## 60GHz - 90GHz



Plot 7-135. Ant 1-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions EIRP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
76685.00	Low	50	2Tx	QPSK	V	306	252	-38.29	-13.00	-25.29
77000.67	Mid	50	2Tx	QPSK	V	307	252	-34.34	-13.00	-21.34
79950.82	High	50	2Tx	QPSK	V	305	252	-31.84	-13.00	-18.84
83107.50	Hiah	50	2Tx	QPSK	V	305	252	-39.45	-13.00	-26.45

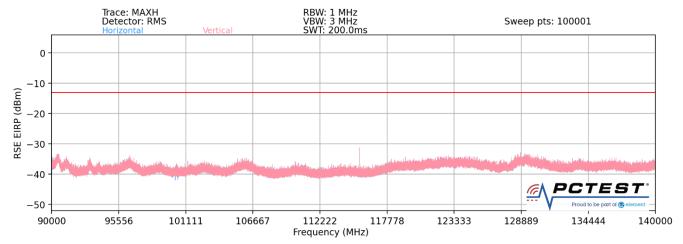
Table 7-89. Ant 1 - 2Tx - Spurious Emissions Table (60GHz - 90GHz)

#### **Notes**

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 126 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 120 01 190



#### 90GHz - 140GHz



Plot 7-136. Ant 1-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

# **Spurious Emissions EIRP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
90030.00	Low	50	2Tx	QPSK	V	-	-	-39.78	-13.00	-26.78
96540.00	Low	50	2Tx	QPSK	V	-	-	-36.88	-13.00	-23.88
97485.06	Low	50	2Tx	QPSK	V	-	-	-39.63	-13.00	-26.63
115020.00	Mid	50	2Tx	QPSK	V	308	260	-33.40	-13.00	-20.40
115500.00	Mid	50	2Tx	QPSK	V	308	260	-33.42	-13.00	-20.42
115780.00	High	50	2Tx	QPSK	V	305	256	-33.28	-13.00	-20.28

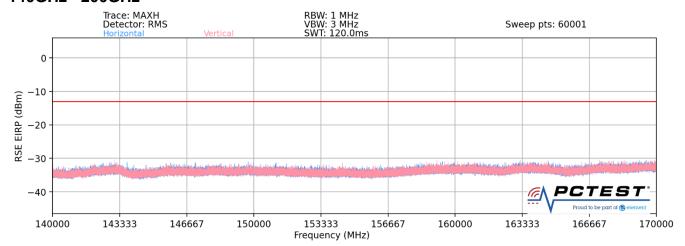
Table 7-90. Ant 1 - 2Tx - Spurious Emissions Table (90GHz - 140GHz)

## **Notes**

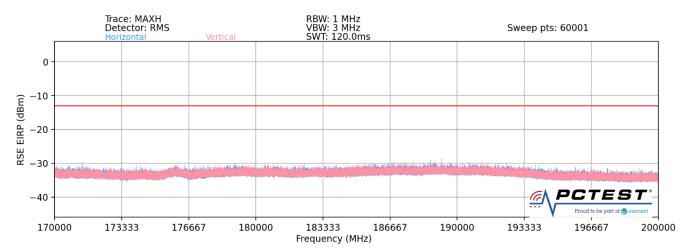
FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 127 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Fage 127 01 190



## 140GHz - 200GHz



Plot 7-137. Ant 1-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx – EN-DC Anchor Band 2)



Plot 7-138. Ant 1-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

FCC ID: A3LSMS901U	Product to be part of (8) element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 128 of 198
1M2109080099-06-R1.A3L 09/15/2021-01/06/2022		Portable Handset	Fage 128 01 198	



# **Spurious Emissions EIRP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
149450.00	Low	50	2Tx	QPSK	V	-	-	-35.88	-13.00	-22.88
153992.91	Mid	50	2Tx	QPSK	V	-	-	-37.71	-13.00	-24.71
177494.21	High	50	2Tx	QPSK	V	-	-	-37.72	-13.00	-24.72

Table 7-91. Ant 1 - 2Tx - Spurious Emissions Table (140GHz - 220GHz)

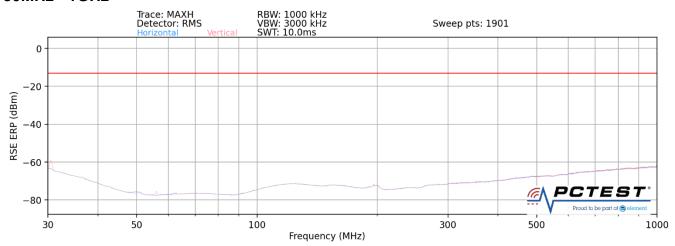
#### **Notes**

FCC ID: A3LSMS901U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 129 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset	Page 129 01 190



## Band n260 (N Patch)

## 30MHz - 1GHz



Plot 7-139. Ant 2-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

## **Spurious Emissions ERP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
191.56	Low	50	2Tx	QPSK	Н	-	-	-68.28	-13.00	-55.28
752.90	Mid	50	2Tx	QPSK	Н	-	-	-67.86	-13.00	-54.86
982.64	High	50	2Tx	QPSK	Н	•		-61.64	-13.00	-48.64

Table 7-92. Ant 2 - 2Tx - Spurious Emissions Table (30MHz - 1GHz)

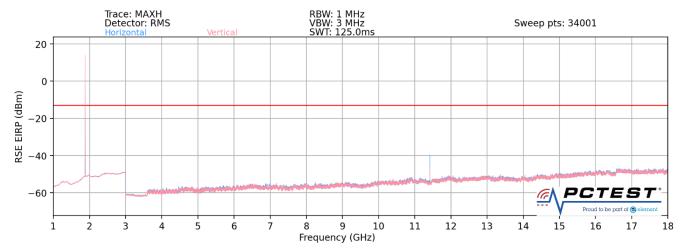
## Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 130 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 130 01 196



## 1GHz - 18GHz



Plot 7-140. Ant 2-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx - EN-DC Anchor Band 2)

## **Spurious Emissions EIRP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
2426.00	Low	50	2Tx	QPSK	Н	-	-	-66.45	-13.00	-53.45
5233.00	Mid	50	2Tx	QPSK	Н	-		-69.68	-13.00	-56.68
11416.00	High	50	2Tx	QPSK	Н	355	116	-46.93	-13.00	-33.93

Table 7-93. Ant 2 - 2Tx - Spurious Emissions Table (1GHz - 18GHz)

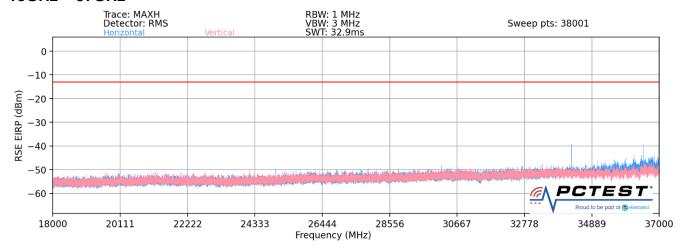
## **Notes**

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 131 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 131 01 196



## 18GHz - 37GHz



Plot 7-141. Ant 2-n260 Radiated Spurious Plot (1CC QPSK Mid Channel 2Tx- EN-DC Anchor Band 2)

# **Spurious Emissions EIRP Sample Calculation (n260)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
27894.40	Low	50	2Tx	QPSK	Н	174	150	-57.44	-13.00	-44.44
34247.30	Mid	50	2Tx	QPSK	Н	328	150	-49.92	-13.00	-36.92
36503.00	High	50	2Tx	QPSK	Н	222	150	-49.33	-13.00	-36.33

Table 7-94. Ant 2 - 2Tx - Spurious Emissions Table (18GHz - 37GHz)

## **Notes**

FCC ID: A3LSMS901U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 132 of 198
1M2109080099-06-R1.A3L	09/15/2021-01/06/2022	Portable Handset		Page 132 01 196